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## USING METAMUSIC® IN A THERAPEUTIC-EDUCATIONAL APPROACH TO AUTISM

by Berenice Luque

*Berenice Luque is a phonoaudiologist specializing in communication and language disorders. She is the creator and director of the interdisciplinary service “El Angel” in the Provincial Children’s Hospital of Rosario in Rosario, Argentina, and is a colleague of TMI Professional Member and OUTREACH Facilitator Nora Rosen’s. Before beginning the usual therapeutic and educational interventions for autism, Berenice has her patients listen to METAMUSIC at least once a day—and three times a day if possible. This allows her to identify any changes attributable to Hemi-Sync® before regular treatment begins. This paper is based on a conference presentation. The data and the results Berenice obtained suggest why El Angel’s schedule is so full that potential patients are on a waiting list.*

### Materials and Methods

Hemi-Sync is an audio technology that combines binaural beats with different musical selections and sometimes verbal guidance to stimulate hemispheric synchronization. The technology was developed by The Monroe Institute, a nonprofit organization dedicated to education and research over a period of more than forty years, with the support of professionals specializing in psychology, medicine, psychiatry, education, and many other fields. I have used the Hemi-Sync cassettes and CDs over a period of four years and proved the benefits to myself with thirty-three patients diagnosed with autism and other severe developmental disorders in the autistic spectrum.

The METAMUSIC Einstein’s Dream cassettes with Hemi-Sync were played as environmental music, sometimes with the television or the radio on as well. The cassettes were donated by The Monroe Institute at the request of Nora Rosen.\*

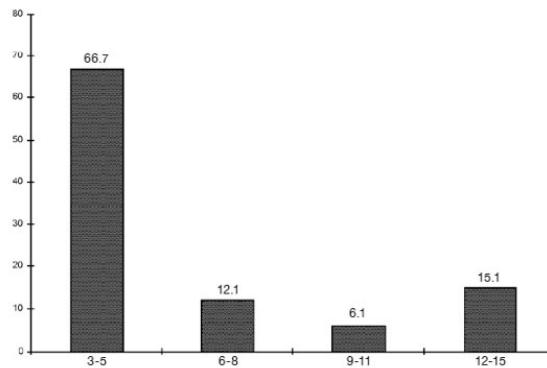
Patients use the cassettes twice a day in their homes and also when they come to *El Angel* four times a week for three hours. At *El Angel*, they receive an educative therapeutic approach that includes personal treatment in psychology, phonoaudiology, therapeutic music, and pedagogy in a workshop mode. This workshop was created to care for patients with limited resources. It was staffed with volunteers until October 2006. Now we have contracts for three professionals and another contract for an autism specialist who will work as an auxiliary. *El Angel* is named in honor of the esteemed psychologist Angel Rivière.

A pre/post experimental design was used. Different variables of the Autistic Spectrum Inventory (created by Angel Rivière) were measured, together with fine and gross motor skills,

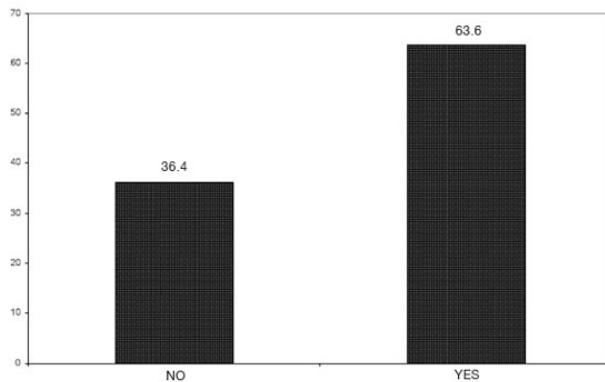
drawing/painting, reading/writing, hyperactivity, sphincter control, sleep patterns, and emotional patterns, before and after exposure to Hemi-Sync. Each patient was considered as both the control and the experimental subject.

### **Characteristics of the patients who received this treatment**

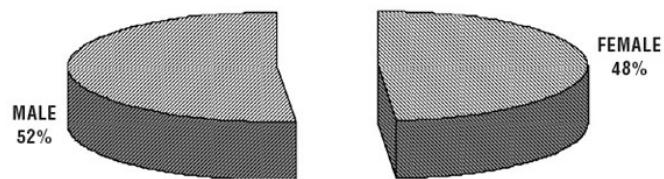
**AGE DISTRIBUTION OF THE PATIENTS**



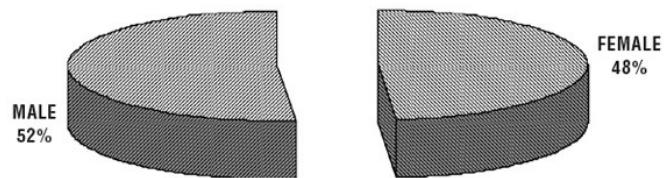
**HOSPITAL PATIENT**



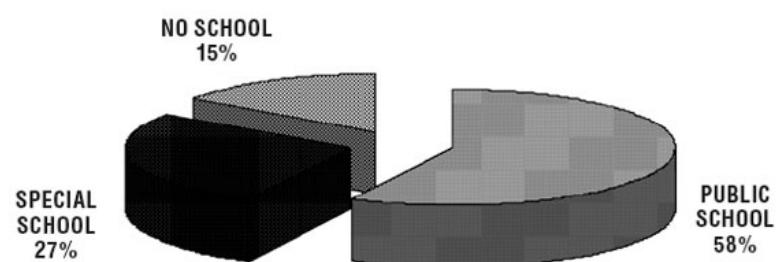
### SEX DISTRIBUTION OF THE PATIENTS



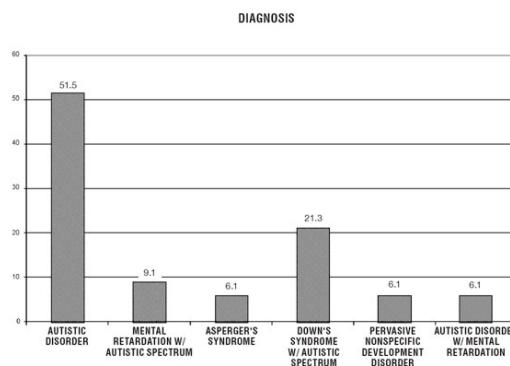
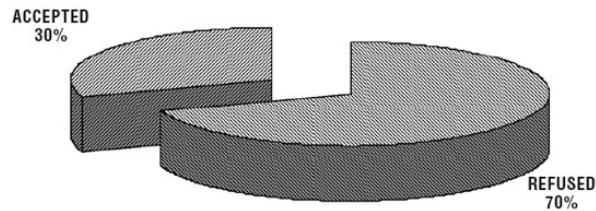
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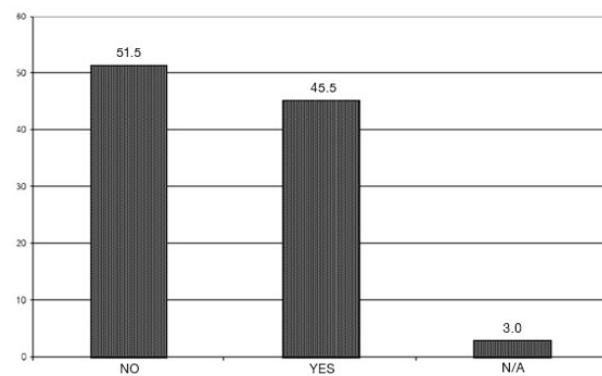
### EDUCATION TYPE



PERCENTAGE OF THE PATIENTS WHO REJECTED TREATMENT  
DURING THE FIRST 10/15 DAYS



REGRESSIONS



**Treatments these patients have received and receive**

Twenty-one patients from hospitals received only phonoaudiologic and psychological treatment once a week, plus Hemi-Sync, until *EI Angel* opened.

Six patients used only Hemi-Sync for almost forty-five days as they were waiting to enter *E/ Angel*.

Three patients of *E/ Angel*—due to their progress—were moved into a workshop for persons with high-functioning autism and Asperger's syndrome. That workshop is given in a public school twice a week for two hours. Five other patients with similar characteristics come to this workshop.

## **Findings and Conclusions**

Synopsis specifying the thirty-three patients' characteristics:

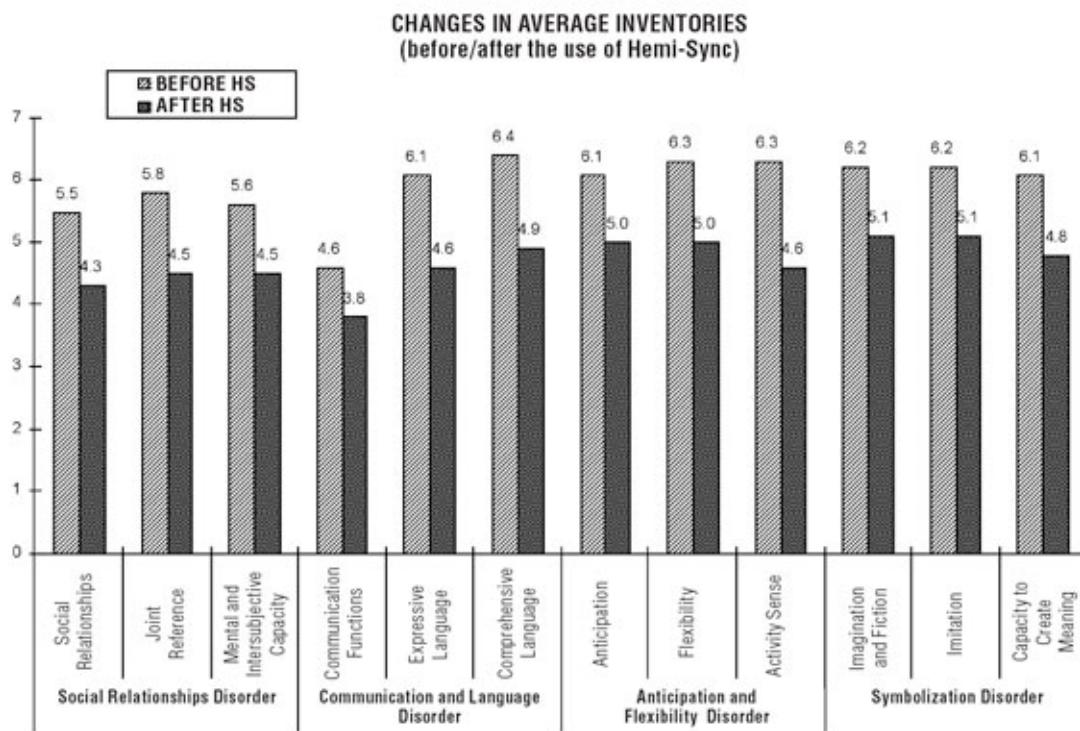
	Difficulty	Improved	No Change
Fine Motor Skills	19	14	5
Gross Motor Skills	22	14	8
Drawing/Painting	33	10	23
Reading/Writing	33	10	23
Hyperactivity	17	16	1
Sphincter Control	8	4	-
Sleep Patterns	15	8	7
Affective/emotional patterns	30 (Self Abuse, Aggression, Tantrums, Withdrawal, Passivity)	28	2

Dimensions of the Autistic Spectrum Inventory (ASI) are measured on a scale where zero means absence of pathology and eight means severe pathology. Average values were obtained for each of the twelve dimensions of the ASI before and after the use of Hemi-Sync. The beneficial effects of Hemi-Sync were evident in 55% of the children after fifteen days of use.

- Fifteen patients suspended the use of Hemi-Sync and regressed. When Hemi-Sync was reintroduced they returned to their previous level of improvement.
- In severe cases when there were variables in the family environment—such as parents' quarrels, family violence, etc.—the favorable influence of Hemi-Sync fluctuated, especially in relation to behavior, communication, and the patients' emotional/ affective state.
- In one of the patients, the observed changes did not last over time. In eight patients the changes fluctuated, in another patient no data were collected, and in the remaining twenty-three patients the changes were stable.
- Ten patients rejected Hemi-Sync during the first days for no apparent reason. Later they accepted Hemi-Sync like the other patients.

- The inclusion of Hemi-Sync with other therapies increases the benefits obtained in comparison to the usefulness of the standard therapies without Hemi-Sync.

The following graph shows the remarkable decrease in the average values in all dimensions.



### The Most Noticeable Changes were Observed in:

- Emotional/affective aspect: twenty-eight patients out of thirty improved
- Hyperactivity: sixteen patients out of seventeen improved
- Activity sense (meaningful activity): it diminished by 1.7% in level of seriousness on the autistic spectrum
- Expressive and comprehensive language disorder: it diminished in severity by 1.5%
- On average, every altered category of disorder in the Autistic Spectrum Inventory diminished by 5.93 to 4.69 points.

### Comments from Parents

- “He speaks more day by day since [using] the music [METAMUSIC]. He is calmer. He does not come to parents’ bed. He answers more than before when one talks to him. He is more attentive. He kept his little brother from falling, [where] before he did not even notice him.”  
(Parents of F., five years old)

• “He always had difficulty going to sleep. Now, after fifteen days of listening to Hemi-Sync, he asks to play the music. He listens to one side, and he gets up to ask [the cassette] to be turned to the other side. He listens to it lying down with the light off, and he falls asleep. Since L. was very little, he got up from the bed more than three times during the night. He lay on the floor very tense; his breathing was too noisy. Now his body and breath are normal, and he does not fall to the floor. He is quieter during the day. He comments on things at school; he says the names of his teachers. There are many changes, and the relaxation he is achieving is noticeable. He shares and integrates in play with other children, whereas before he was too anxious. Now he knows how to wait his turn. He bathes alone and he learned to put his tennis shoes on. Before it would have been unthinkable that he could do that. Thank God, it is a great goal in the life of L.” (Mother of L., thirteen years old)

• “In the beginning he put his hands on his ears and asked to turn it [Hemi-Sync] off, threw everything, yelled, and flapped his arms as [he does] when he is nervous. This lasted almost fifteen days. Little by little he accepted playing both sides and now he listens with no problem at all. He began to speak... some clearer words. He points with his finger, he pays more attention, and he stays sitting and playing longer. He no longer gets up from the table when he is eating. Now he eats all. Before he was too selective because he ate only one kind of cookies.” (Mother of B., three years old)

*[Special thanks to Nora Rosen for her translation of this paper.]*

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